MIDDLE ATLANTIC
Region 1
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Integrating library resources, technology, and point-of-care
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Executive Summary

Our primary goals for this project were:
1.To increase usage of existing library resources by offering them in alternative formats (i.e. applications/mobile devices);
2. To enhance and expand access for volunteer clinical faculty acting as site supervisors, or preceptors, (preceptors) to our students by providing the latest, up-to-date, quality healthcare information in portable and point-of-care formats;
3. To enable students to incorporate the use of mobile devices in a practical setting and to be able to assess their usefulness in such settings;
4. To enhance patient education and participation in their healthcare through improved understanding of medical conditions, treatment options, and access to information.

Our target population was our MD Year 2 students, their preceptors, and their patients. We selected MD Year 2 students for this project because of the timing with their Community Week experience. During this week, they spend time with their preceptors in clinical settings, and this would optimize opportunities to meet the goals that we had outlined for the project.

We worked with our Information Technology Services (ITS) department in selecting a device for this project; ITS configured the Dell Latitude ST tablets that were selected, and loaded the apps for us.

One of the major accomplishments of the project was the feedback received from students regarding what they were using the tablets for and why. For example, the majority of students observed that the tablets were useful for their own study and research. They used the tablets to access course materials and library resources such as USMLE preparation materials and electronic textbooks. The size of the tablet was convenient at times when a laptop might be too large, but a phone too small. Overall, we learned that, at times, what is going on out in the field may not mesh with our goals for use of library resources and dissemination of information.

Minority Populations Served

African Americans: No
American Indians/Alaska Natives: No
Asian Americans: No
Hispanics/Latinos: No
Native Hawaiians and Pacific Islanders: No
Other: No

Approaches and Interventions Used

Approaches and Interventions Used

In December 2011 Librarians Bridget Conlogue and Amanda Avery set up a LibGuide for the project. The LibGuide would provide a virtual gathering place for students to post about their experiences, and serve as a go-to place for information about the project. We worked with our ITS department to select and purchase the tablets. We conducted an informal poll at the Information Services Desk to determine what types of resources students would like to have on tablets. Most of the students expressed an interest in having access to TCMC network without having to enter guest credentials. Conlogue, Avery and Muellenbach also developed the User Pre-Project and Post-Project evaluation tools that would be given to the students before they received their tablets, and at the conclusion of the project.

In February 2012, we sent out a notice via e-mail to our MD Year 2 students, asking for volunteers for the project. We had purchased ten tablets, and recruited nine students, keeping one tablet for the librarians' use. Students' response to the project was rapid and we had a group formed within a few days. Upon signing up, students agreed to attend both an orientation and exit session, to fill out the Pre-Project and Post-Project evaluation tools, to make a minimum of three, 100-word posts to the LibGuide, and to take the tablet with them during their Community Week.

On February 27, 2012, students attended a mandatory orientation session. They filled out the User Pre-Project Evaluation tool, Outreach Activity Participant Information Sheet, and were given tablets. Conlogue reviewed the Project Agreement, demonstrated the LibGuide, and assisted Josh Rose from ITS in acquainting the students with the tablets.

On April 18, 2012 Librarians Bridget Conlogue and Joanne Muellenbach met with the students for an exit session. Students returned their tablets, filled out the User Post-Project Evaluation tool, and while eating pizza provided for them, discussed the project and their experiences with the tablets. They felt positive about the use of the tablets, but expressed concern about the choice of the Dell tablet for this project. To encourage active participation in the project, a student's name was entered into a drawing for a Skyscape gift card each time s/he posted to the LibGuide. The drawing was held at the exit session.

Evaluation Activities

Evaluation

Overall, students felt that tablets could be useful in a clinical setting and a helpful tool for their medical education. They expressed a strong interest in being able to connect to Electronic Medical Records (EMR) through the tablets, a possible use that we had not considered.

The students observed that using a tablet looked more "professional" than using a phone, especially while with patients.

We had four primary goals for this project:

1. To increase usage of existing library resources by offering them in alternative formats (i.e. apps/mobile devices). Eight of the nine students indicated on the User Pre-Project Evaluation tool that they use 0-5 library e-resources per week. Four of the nine students indicated on the Post-Project Evaluation tool that they used the tablet 5-10 times per week to access medical information, for their own study and research.. We are interpreting these results, combined with students' comments on the LibGuide as a modest increase in use of library resources due to the tablets.
2. To enhance and expand access for volunteer clinical faculty acting as site supervisors, or preceptors, to our students by providing the latest, up-to-date, quality healthcare information in portable and point-of-care formats. In the User Pre-Project Evaluation tool, six of the nine students indicated that their preceptors do not use mobile devices in the clinical setting. Several students noted in their LibGuide comments that they were able to access information for their preceptors on the tablets. Five of the nine students indicated that they used the tablet for patient care during the project. We interpret this as a modest step toward our goal of enhancing and expanding access for volunteer clinical faculty to healthcare information in portable formats.
3. To enable students to incorporate the use of mobile devices in a practical setting and to be able to assess their usefulness in such settings. Students adhered to the agreement that they would take the tablets with them to their Community Week. They also used them in class, in small group, and for studying on the road. They were very detailed in their LibGuide posts and vocal at the exit session about the usefulness of tablets during the project, and in providing feedback for future ways to incorporate tablets into the clinical setting and their medical education. We consider this goal adequately met.
4. To enhance patient education and participation in their healthcare through improved understanding of medical conditions, treatment options, and access to information. In the User Pre-Project Evaluation tool, "On a scale of 1-5, do you see a strong potential for tablet computers to enable convenient access to patient education information, i.e. medication or treatment information, or to augment your patient interaction experience?", four students indicated 4, and five students indicated 5. However, in the User Post-Project Evaluation tool, in response to the same question, one student indicated 1, two students indicated 3, three students indicated 4, and three students indicated 5. The difference between the responses in the two evaluation tools is interpreted as a direct result of the expectation for patient interaction compared with the actual number of opportunities or the need to provide their patients with patient education information. Although we hoped that use of the tablets would help fill a patient education need, this limited example indicates to us that this may not have been a realistic goal for this project, although the majority of the students strongly believed at the conclusion of the project that use of the tablets in this way was important.

Problems or Barriers Encountered

Problems or Barriers Encountered

A major barrier encountered during the project was upon receipt of the tablets. We received the tablets on January 20, 2012, but Josh Rose, the ITS staff person responsible for configuring the tablets, was not able to start until the first week of February, due to his workload. Once he began, he encountered difficulties in cloning the tablets and loading the Skyscape applications. He discovered that each student had to meet with him at his office and login to a tablet so that he could set them up with access to TCMC network.

We considered the fact that some of the clinical sites that students would be visiting during their Community Week would not have access to the Internet, thus restricting students' ability to access to library point-of-care and clinical resources. To remediate this possibility, we purchased a suite of Skyscape apps that could be loaded onto each tablet and did not require the Internet for access. The suite of apps provided excellent information for the clinical setting, but students reported that they were slow to load, and this was a definite drawback in the fast-paced clinical setting.

The Dell tablets feature a full Windows 2007 operating system (OS), and students observed that an Android OS or iOS would have allowed more processing speed.

Students also experienced difficulty in using the tablet's stylus and found that using the tablet to record patient information was almost impossible; they noted that using pen and paper was much easier and more efficient. One of the students posted on the LibGuide that keyboards would be useful for rapid data entry. Before the Community Week began on April 3, 2012, we purchased wireless keyboards. Unfortunately, the keyboards were not received until after the community week and students were not able to use them as planned.

The tablets did not fit into the women students' coat pockets and it was inconvenient for them to have to carry the tablet in their hand.

Continuation Plans

Continuation Plans

Comparison between student responses in the User Pre- and Post-Project Evaluation tools indicate that these tablets would be most useful for their medical education, rather than for their clinical work. The library will retain the tablets for checkout to students who want to use a device that is smaller than a laptop, but provides a larger reading area than a phone. We expect that students would check them out for use in small groups and in class, to access library databases and e-books, and for studying while traveling; they provided positive feedback for these types of uses during the project. We may also consider ways that faculty and administration would use the tablets. The tablets are wi-fi enabled, so future users would be able to connect to the internet if they needed to. We would not be able to fund a data plan for the tablets.

Impact

Impact

The project contributed to the knowledge and understanding of TCMC Library, ITS, and the Academic Computing departments of students' educational needs as they progress into their 3rd and 4th years. The students provided valuable feedback about their computing and information needs both in and out of the classroom and for the clinical component of their education. Cumulatively, we consider this a very successful outcome of the project. Our primary function to support the educational needs of our students and the project provided us with an opportunity to further pursue our mission.

Using the Dell tablets provides us with a control group that could be compared with the iPad projects that are taking place at other institutions. We will use the information gathered from this project to be able to make an informed, evidence-based decision regarding whether to use iPads or another type of tablet, and whether to use them at all in our students' medical education. The results of our project may provide invaluable to other institutions working through a similar discernment process.

Conlogue and Muellenbach will present the results of this project as an invited poster session at the Canadian Health Libraries Association Annual Conference during the week of June 11, 2012, in Hamilton, Ontario, Canada.

Lessons Learned

Lessons Learned

If time had permitted, conducting student focus groups to discuss, in greater detail, the actual use of the tablets in the field would have been beneficial in determining our project goals. We could have also investigated more fully the pros and cons of using iPads versus the Dell tablets.

Regardless the tablet, pen and paper remain the quickest way to record patient conversations, at least in our students' opinion. The Dell tablet allows writing, but autocorrect does not recognize all of the medical terms our students need to use. Typing on a keyboard is an option in such a setting, but students observed that, very often, they were standing while the patient and physician were sitting, making typing impossible. Also, a keyboard was another item to carry around. One student mentioned that voice dictation capability would be very useful.

It was interesting to read the students' posts and learn about how they were actually using the tablets. One student made an important point with her comment that trying to learn and integrate a new device into a clinical routine that is also very unfamiliar to them was challenging. At the exit session, students observed that this type of project would be very appropriate for the third year medical students who spend the majority of their time in clinical settings and have a higher level of comfort in such settings as compared with second year medical students. This underscores the importance of understanding the habits and preferences of users when developing a project such as this.

The LibGuide was simple to set up and use for the purposes of communication.

Students are very sensitive to time while in the clinical setting; quick access to resources is of utmost importance to them.

Several students noted that although it was slow, having the Skyscape app on the tablet was very useful when they did not have internet access. The downside of these types of apps is that they must be purchased yearly, and it has not yet been determined if our library will have the budget to sustain them.

Other

Newsletter for TCMC has not yet been published, will be in next QTR.

Attachment 1: AR summary data: Subcontractor activities